

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1.-29. (canceled)

30. (new) An informatics system for data structuring via data structuring objects, wherein a data structuring object includes a presentation interface, program code to structure data, program code to query data using a graphical interface, wherein the querying is done on native data content in situ, the informatics system comprising:

an object handler for supporting the data structuring objects;
a generator for generating a data structuring object to be associated with native data content;
at least one description data structure within the data structuring object, wherein a description data structure describes, using a common user presentation interface and interaction format, the native data content associated with the data structuring object;
at least one subset vector within the data structuring object, wherein a subset vector describes a subset of the associated native data content and wherein at least one subset factor is user-defined, thereby allowing for structuring data in the context of native data content without requiring restructuring of the data or programming; and
a master ontology generator for generating an ontology of data structuring objects.

31. (new) The informatics system of claim 30, wherein the at least one subset vector comprises a direct pointer to addressed content, further comprising a binary pointer structure to link addressed content to look-up-tables of the ontology, to provide a binary-encoded look-up source for information of relevance to each data structuring object.

32. (new) The informatics system of claim 30, wherein the ontology comprises look-up-tables organized by user, to allow for custom ontologies for a plurality of users.

33. (new) The informatics system of claim 30, wherein the subset of the associated native data content is a proper subset.

34. (new) The informatics system of claim 30, wherein at least one subset vector is a multidimensional vector.

35. (new) The informatics system of claim 30, wherein the at least one subset vector is represented by a matrix according to a matrix structure descriptor that maps data subsets defined within the data structuring object to data within the associated native data content.

36. (new) The informatics system of claim 35, wherein the data subsets within the data structuring object include extracted meta-data, annotated meta-data, detected content element subsets or defined content workspace subsets.

37. (new) The informatics system of claim 30, further comprising logic to support a plurality of subset views simultaneously for multiple users according to one or more of user preference, level, group and environment definition settings.

38. (new) The informatics system of claim 37, further comprising means for enabling content access; and means for routing data.

39. (new) The informatics system of claim 30, further comprising:
program code to query data using a graphical interface; and
program code for interacting with other entities of the informatics system according to information provided by the subset vectors and content description workspaces.

40. (new) The informatics system of claim 30, wherein the data structuring object further comprises:

program code for graphical presentation;
program code for element detection;
program code for workspace subset detection and definition; and

program code for association of meta-data and the native data content associated with the data structuring object.

41. (new) The informatics system of claim 30, wherein the data structuring object further comprises:

program code for controlling access privileges to the data structuring object and its associated native data content, wherein access privileges are represented by tuples comprising unique data structuring object identification, user identification, and a content subset definition.

42. (new) The informatics system of claim 30, wherein the data structuring object further comprises program code for processing data from a plurality of distinct data sources and maintaining a log of processing steps, thereby allowing monitoring and roll back of processing steps.

43. (new) A system as in claim 30, wherein the data structuring object further comprises program code for extraction, normalization and analysis of data content and content relationships, including:

program code for reading native data content associated with the data structuring object;
program code for translating information content of the native data into a common data format;

program code for presenting the information content into the common data format;
program code for normalizing information from a plurality of native data sources to a compatible format;

a master query component enabling user and rule-driven queries to external databases and to information contained within a pool of data structuring objects.

44. (new) The informatics system of claim 43, wherein the information being normalized comprises extracted meta-data, annotated meta-data, detected content element subsets or defined content workspace subsets.

45. (new) The informatics system of claim 43, further comprising:
program code for generating reports as data content for data structuring objects;
program code for report auditing of data structuring object state and processing history;
program code for providing selected security for distribution, by granting or denying access
to all or subsets of data content according to user permission determined by one or more
of user identity, environment variables, group association, and level management
designation;
program code for linking data structuring objects to each other according to their content
definitions and positions within the ontology for providing query optimization,
weighted clustering and relevancy ranking;
program code for linking, using factors, source data as paths for subsequent queries;
a data link definition interface enabling selection of information presented by one or several
databases and/or data structuring objects and definition of relationships between
selected information as well as outputs and processes to be triggered according to the
status of selected information; and
program code for monitoring and synchronizing data objects according to their status and
context.

46. (new) The informatics system of claim 45, further comprising:
a status management component comprising binary triggered listening flags set on each
object and logic for communicating with a centralized state management engine; and
logic for activating communication between objects and applications on the operating
system level to pipelining and replay multi-step processes defined within a data
structuring object applications view.;

47. (new) The informatics system of claim 43, wherein the master query
component is configured to search for data objects satisfying a search criteria and to identify data
objects interconnected to those data objects satisfying the search criteria.

48. (new) The informatics system of claim 43, wherein the master query component is configured to search multiple database fields residing in one or more similar or heterogeneous relational databases using meta-fields created by selecting and mapping fields presented by the relational databases through a visual interface.

49. (new) The informatics system of claim 43, wherein the master query component is configured to search multiple database fields residing in one or more similar or heterogeneous web databases using meta-fields created by selecting and mapping fields presented by the web databases through a visual interface.

50. (new) The informatics system of claim 43, further comprising a knowledge extraction engine to perform statistical analysis of queries and to assist in data mining.

51. (new) The informatics system of claim 43, further comprising a distributed learning engine to validate and rank search results and to utilize report information to optimize query efficiency.

52. (new) The informatics system of claim 43, further comprising a neural network for creating weighted links between objects, for use in optimizing searching and analysis of interconnected data objects.

53. (new) A method of organizing and searching data, comprising:
instantiating a data object for each data item to be organized and searched, wherein a data item comprises a data point or data set, the data object including at least one pointer to a source of the data item;
for each data object, providing a graphical user interface to receive object descriptors from a user to define common presentation and interaction layers for the data item;
in response to a user search query, accessing the source of the data item using at least the pointer;
accessing content subsets of data corresponding to the data item in native data format;
translating data into an intermediate data format from the native data format;

performing a search for a vector subset of data attributes and object descriptors of the data item using the intermediate data format; and presenting search results for the search query using the common presentation layer.

54. (new) The method of claim 53, wherein accessing content subsets of data comprises traversing pointers to data in the native format, the pointers comprising one or more of a URL, a meta-data link, an SQL expression, a file path or a vector.

55. (new) The method of claim 53, further comprising: determining interconnected data objects having direct information interchange of at least one component of a multi-dimensional data vector; and expanding the search query to analyze the data points of the data objects determined to be interconnected.

56. (new) The method of claim 53, further comprising using boundary protocols comprising program code and administrative information for controlling access to sets of data structuring objects.

57. (new) The method of claim 53, further comprising generating a first search result limiting the search to data objects having object descriptors defined by the user in the search query.

58. (new) The method of claim 53, further comprising knowledge extraction for statistical analysis of queries.

59. (new) The method of claim 53, further comprising using a neural network enabling definition and weighting of linkages for optimizing analysis of interconnected data objects.

60. (new) An informatics system for managing multidimensional data from a plurality of different data sources, comprising:

data object means for defining data objects representing individual data items, wherein a data item is a data set or a data point;
direct content accessing means for accessing data content of data items in their native form;
communication means for communicating with the data objects;
object handler means for generating, managing, processing and querying data objects;
data pane means for defining descriptors of the data objects;
translation means for converting data associated with different data items into a common format;
master query search means for searching data objects as vector subsets of data having data attributes and object attributes;
data link description means for defining data content subset relationships and for triggering activity based on information pertaining to detected data content and content relationships.

61. (new) The system of claim 60, further comprising inter-object direct information exchange means for exchanging information between data objects for related data items.

62. (new) The system of claim 60, further comprising boundary protocols for virtual databases.

63. (new) The system of claim 60, further comprising a knowledge extraction engine to perform statistical analysis of queries.

64. (new) The system of claim 60, further comprising a distributed learning engine to validate and rank search results.

65. (new) The system of claim 60, further comprising a neural network for optimizing a search of interconnected data objects and for definition and weighting of linkages for optimizing analysis of interconnected data objects.